

REMARKS/ARGUMENTS

Claims 1-15 are pending in the application. Claims 3 and 11 have been amended. The amendment is fully supported by the original disclosure. No new matter has been introduced. Reconsideration and allowance of claims 1-15 in view of the following remarks is respectfully requested.

The objection to the drawings:

The Examiner has objected to the drawings because they fail to show "epicycloidal-shaped" described in the specification at page 3, line 31 and on page 4, line 27. Applicant cannot agree. Specifically, the sections of the specification cited by the Examiner discloses that chamber 34 preferably has an epicycloidal-shape and likewise combustion chamber 50 also has an epicycloidal-shape. Figs. 2, 5, and 6 show chamber 34 with such an epicycloidal-shape and Figs. 2 and 7 show combustion chamber 50 with such an epicycloidal-shape.

Additionally, the Examiner has objected to the "third compression axis 68" described in the specification not being shown in the figures. In response, Applicant has submitted proposed changes to Figs. 5 and 6 adding reference numeral 68. Lastly, the Examiner has objected to the drawings for not showing "a plurality of the rotary internal combustion engines being used in series along the same axis rotation". In response, Applicant has attached a proposed figure 9 showing the arrangement described in the specification.

The objection to the specification for informalities:

The Examiner detailed several suggestions for amending the specification to improve consistency of enumerated terms as well as inadvertent mislabeling of enumerated parts. In

response, Applicant has adopted the Examiner's suggestions and amended the specification accordingly.

The objection to the claims for informalities:

The Examiner has objected to claim 3 and 11 for the informal language "will cause" and suggested replacing it with "causes". In response, Applicant has adopted the Examiner's suggestion and amended claims 3 and 11 accordingly.

The objection to the claims 1-4, 9-10, and 12 for double patenting:

The Examiner has objected to claims 1-4, 9-10, and 12 for non statutory obviousness type double patenting.

Applicant traverses the double patenting objection for the following reasons. Applicant's independent claims 1 and 13 are not obvious in view of application Serial No. 10/390,083 (The "'083 application"). Specifically, independent claim 1 of the present application requires the ignition chamber be "offset in relation to" the compression chamber. As will be argued in more detail below, this limitation is structurally distinct and has functional significance in view of the prior art, and is likewise structurally distinct and has a functional significance in view of the '083 application. Accordingly, independent claim 1 is not an obvious double patenting of application '083.

Likewise, independent claim 9 requires that the combustion chamber and ignition chamber have "epicycloidal-shaped" chamber walls. As will be described below in more detail, this wall shape is structurally distinct and has a functional significance in view of the prior art, and likewise is structurally distinct and has a functional significance in view of the '083 application. Accordingly,

independent claim 9 should not be subject to an obvious type double patenting objection.

Likewise, dependent claims 2-8 and 10-15 are likewise not obvious in view of the '083 application, due at least to their dependence on independent claims 1 or 9.

The rejection of claims 1-7 and 9-14 under 35 U.S.C. §103:

Claims 1-7 and 9-14 stand as rejected under 35 U.S.C. §103 as being unpatentable over Lepine (U.S. Patent No. 3,716,033) in view of design choice.

The Examiner has cited Lepine as teaching the basic structure of a rotary internal combustion engine, but depends on the knowledge of one of ordinary skill in the art to supply "the relation between the compression chamber position and the ignition chamber" as well as "an epicycloidal-shaped" wall of the compression chamber and the ignition chamber as a matter of design choice depending on the engine requirements.

Applicant respectfully disagrees with the Examiner's conclusion and traverses the rejection for the following reasons. First, the Examiner has failed to establish a *prima facia* case of obviousness because there is no suggestion nor motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the reference as suggested.

Regarding Applicant' independent claim 1, claim 1 recites "a compression chamber having a first zero degree position ... and an ignition chamber having a second zero degree position ... wherein the second zero degree position is offset in relation to the first zero degree position". As noted by the Examiner, Lepine does not disclose such an arrangement. Further, Fig. 1 of Lepine shows chambers 12 and 10 directly align with one another. Applicant cannot agree

with the Examiner's conclusory statement that "the relation between the compression chamber position and the ignition chamber position" would be obvious as a matter of design choice depending on the engine requirements. First, claim 1 provides an engine that is structurally distinct from Lepine as discussed above. Second, this structural distinction of an "offset" between the chambers is functionally significant, as described in the specification at page 7, line 21 to page 8, line 6. In brief, this section details that the efficiency of the rotary engine can be improved by the positioning of the combustion chamber 50 in relation to compression chamber 34 about the rotational axis of the crankshaft 24.

The Examiner has cited no art showing that such an arrangement is known to those skilled in the art, nor has the Examiner asserted personal knowledge that such an arrangement is well known. Instead, only conclusory statements have been provided, which are insufficient to meet the Examiner's burden of providing a *prima facia* case of obviousness. Specifically, MPEP section 2144.04 VI(C) provides that in cases where the Examiner asserts a rearrangement of parts as an obvious matter of design choice that the "prior art must provide a motivation or reason for the on the art, without benefit of Appellant's specification, to make the necessary changes in the reference device" and "the mere fact that a worker in the art could arrange the parts of the referenced device to meet the terms of the claims ... is not by itself sufficient to support a finding of obviousness." Here, as stated above, the Examiner has provided no support in the prior art to provide motivation for the suggested modification of Lepine. Accordingly, the Examiner has not

met its *prima facia* burden, and independent claim 1 is not obvious in view of the suggest combination.

Regarding Applicant's independent claim 9, the Examiner has asserted that while Lepine itself does not disclose an epicycloidal-shaped wall of the compression chamber and the ignition chamber, such a shape would be obvious to one of ordinary skill in the art as a matter of design choice depending on the engine requirements.

Applicant cannot agree. According to MPEP section 2144.04 IV(b) findings of changes in shape as being obvious to one of ordinary skill in the art are only appropriate where the particular configuration of the claimed object is not significant. Here, however, the limitation of independent claim 9 in question of the compression chamber and ignition both having an "epicycloidal-shaped chamber wall" is structurally different than the cited reference, and has functional significance. The claimed ""epicycloidal-shaped chamber walls" are shown in Applicant's Figs. 2, 5, 6, and 7 and are clearly distinct from the circular walls of Lepine. Further, not only are these walls structurally different from Lepine, the structural difference has a functional advantage. Specifically, the amount of fuel compressed and combusted per pass in a rotary internal combustion engine is dependent in a large part on the cavity between the rotors and the chamber wall. Further, the rate of compression and combustion is likewise affected by the sub chambers formed between the chamber wall, the rotor, and the vane, thus, the chamber wall shape directly affects the performance of the engine. As the epicycloidal-shaped chamber walls are structurally distinct from the chamber walls of Lepine, and this structural distinction has a

functional significance, the Examiner's assertion that this shape is a mere matter of design choice, is insufficient as a matter of law to meet the Examiner's burden of establishing a *prima facia* case of obviousness. Accordingly, Applicant asserts that independent claim 9 is not obvious in view of the proposed combination.

Additionally, dependent claims 2-8 and 10-15 are likewise not obvious in view of the proposed combination, due at least to their dependence on independent claims 1 or 9.

CONCLUSION

In view of the above amendments and remarks, Applicant believes claims 1-15 are in condition for allowance and Applicant respectfully requests allowance of such claims. If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to telephone the undersigned at 515/558-0200.

Any fees or extensions of time believed to be due in connection with this amendment are enclosed herein; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 50-2098.

Respectfully submitted,



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